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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/695,393

10/29/2003

Kyung-Geun Lee

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6809

49455 7590 04/11/2007  
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EXAMINER

BIBBINS, LATANYA

ART UNIT

PAPER NUMBER

2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/695,393	LEE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	LaTanya Bibbins	2627	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 24 January 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 and 22-29 is/are pending in the application.
- 4a) Of the above claim(s) 17-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9, 11-15 and 22-28 is/are rejected.
- 7) ☒ Claim(s) 6-8, 10, 16 and 29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. In the remarks filed on January 24, 2007, Applicant amended claims 1, 2, 6-12, 16, and 27-29, and submitted arguments for allowability of pending claims 1-16 and 22-29. Claims 17-21 have been withdrawn.

### *Response to Arguments*

2. Applicant's arguments with respect to claims 1-16 and 22-29 have been considered but are moot in view of the new grounds of rejection.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Tomita et al. (US PGPub No. 2003/0202436 A1).**

Regarding claim 1, Tomita discloses an optical disc, comprising: a clamping area (although not specifically illustrated in the drawings, optical discs inherently comprise a center hole and a clamping area at the innermost periphery of the optical disc used for the fixture of the optical disc while recording and reproducing data); a

Art Unit: 2627

lead-in area (Figure 11 element 120 and paragraphs [0073] and [0074]; a data area (Figure 11 element 110 and paragraphs [0073] and [0074]; and a burst cutting area (BCA) between the clamping area and the lead-in area and in which information regarding the optical disc is recorded, wherein the information is read before performing tracking in the data area (Figure 11 element 140 and paragraphs [0073] and [0074]; again, although not specifically illustrated in the drawings, optical discs inherently comprise a center hole and a clamping area at the innermost periphery of the optical disc used for the fixture of the optical disc while recording and reproducing data; in addition, in paragraph [0074] Tomita states that "the tracking information refers to such information for specifying a tracking method which should be performed for reading recorded information from the information data area and lead-in area" which indicates that the tracking information is read before performing tracking in the data area as claimed, wherein the information regarding the optical disc comprises tracking polarity information (paragraph [0074]).

**Regarding claim 11,** Tomita discloses an optical disc, comprising: a first recording layer in which a first lead-in area, a first data area, and a first lead-out area are formed (see RY1 in Figure 2A and paragraph [0039]); and a second recording layer in which a second lead-in area, a second data area, and a second lead-out area are formed (see RY2 in Figure 2A and paragraph [0039]), wherein at least one of the first and second recording layers comprise a burst cutting area (BCA) in which information regarding the optical disc is recorded (paragraphs [0070]-[0074]), the information is read before performing tracking in the first and second data areas (see paragraph [0074]

Art Unit: 2627

where Tomita states that "the tracking information refers to such information for specifying a tracking method which should be performed for reading recorded information from the information data area and lead-in area" which indicates that the tracking information is read before performing tracking in the data area as claimed), and the information regarding the optical disc comprises tracking polarity information (paragraph [0074]).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 2, 4, 5, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomita et al. (US PGPub No. 2003/0202436 A1) in view of Jeon et al. (US PGPub No. 2005/0099916 A1).**

Regarding claims 2 and 12, Tomita discloses the optical disc as recited in claims 1 and 11 respectively, as noted in the 35 U.S.C. 102(e) rejection above, but fails to disclose that the information regarding the optical disc further comprises reflectivity information. Jeon, however, discloses an optical disc wherein the information regarding the optical disc further comprises reflectivity information (paragraphs [0034] and [0036]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include reflectivity information in the BCA, as taught by

Art Unit: 2627

Jeon, in the optical disc taught by Tomita. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to provide an optical disc where reflectivity information "can be read when the high-density optical disc is loaded in an optical disc apparatus or when a data recording or reproducing operation for the high-density optical disc is carried out" (Jeon paragraph [0015]).

**Regarding claim 4,** Tomita and Jeon teach an optical disc as recited in claim 2 but fail to teach that the recording of the tracking polarity information begins at leading bytes in the BCA.

However, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to locate the tracking polarity information in any location of the BCA including in the leading byte. One of ordinary skill in the art at the time the invention was made would have been motivated to do so because locating the tracking polarity information in any location in the BCA of the optical disc would produce identical performance in terms of storing and reading back data.

**Regarding claim 5,** Tomita and Jeon teach the optical disc as recited in claim 4, wherein the tracking polarity information is repeatedly recorded (see Jeon paragraph [0042] where diverse additional information may be repeatedly recorded in remaining information fields of each data unit in the BCA).

Although Jeon does not specify that the repeatedly recorded additional information is tracking polarity, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to repeatedly record the tracking polarity

Art Unit: 2627

information since Jeon indicates, in paragraph [0043], that diverse additional information required to enable a normal data recording or reproducing operation may be recorded in this area.

**7. Claims 3, 13, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomita et al. (US PGPub No. 2003/0202436 A1) and Jeon et al. (US PGPub No. 2005/0099916 A1), as applied to claims 2 and 12 above, and further in view of Nishiuchi et al. (US Patent No. 6,894,962 B1).**

Regarding claims 3 and 13, Tomita and Jeon disclose the optical disc as recited in claims 2 and 12 respectively, but fail to teach that the tracking polarity information and the reflectivity information are recorded with a pattern of crystalline or non-crystalline marks. Nishiuchi on the other hand discloses an optical disc wherein the tracking polarity information and the reflectivity information are recorded with a pattern of crystalline or non-crystalline marks (see the BCA area in column 11 lines 48-53).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the optical disc Tomita and Jeon to include a BCA area recorded with crystalline marks as disclosed by Nishiuchi. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to allow information to be recorded "without damaging the information layer" (Nishiuchi column 11 lines 54 and 55).

**Regarding claim 14**, Tomita, Jeon, and Nishiuchi teach an optical disc as recited in claim 13 but fail to teach that the recording of the tracking polarity information begins at leading bytes in the BCA.

However, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to locate the tracking polarity information in any location of the BCA including in the leading byte. One of ordinary skill in the art at the time the invention was made would have been motivated to do so because locating the tracking polarity information in any location in the BCA of the optical disc would produce identical performance in terms of storing and reading back data.

**Regarding claim 15**, Tomita, Jeon, and Nishiuchi teach the optical disc as recited in claim 14, wherein the tracking polarity information is repeatedly recorded (see Jeon paragraph [0042] where diverse additional information may be repeatedly recorded in remaining information fields of each data unit in the BCA).

Although Jeon does not specify that the repeatedly recorded additional information is tracking polarity, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to repeatedly record the tracking polarity information since Jeon indicates, in paragraph [0043], that diverse additional information required to enable a normal data recording or reproducing operation may be recorded in this area.



**8. Claims 22 and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomita et al. (US PGPub No. 2003/0202436 A1) in view of Kusumoto et al. (US Patent No. 6,295,262 B1).**

Regarding claim 22, Tomita discloses an optical disc, comprising: a first recording layer formed on the optical disc (RY1 of Figure 2A); a second recording layer formed on the optical disc (RY2 of Figure 2A), wherein the first recording layer and a second recording layer each comprise a clamping area (although not specifically illustrated in the drawings, optical discs inherently comprise a center hole and a clamping area at the innermost periphery of the optical disc used for the fixture of the optical disc while recording and reproducing data), a lead-in area (paragraph [0039]), and a lead-out area (paragraph [0039]), wherein the clamping area is an area that is pressurized to clamp the optical disc (again, although not specifically illustrated in the drawings, optical discs inherently comprise a center hole and a clamping area at the innermost periphery of the optical disc used for the fixture of the optical disc while recording and reproducing data); and the BCA is an area in which tracking polarity information and/or reflectivity information is recorded (paragraph [0074]); and a data area recording user data between the lead-in area and the lead-out area (paragraph [0039]).

Tomita fails to indicate that the BCA is located in both the first and second recording layers. Kusumoto, however, discloses an optical disc wherein the first recording layer and a second recording layer each comprise a burst cutting area (BCA) (column 8 lines 11-14).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kusumoto and Tomita. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings because "the added information can be read easily" and it is possible to implement the information "securely and efficiently" (see Kusumoto column 1 lines 52-57).

**Regarding claim 25,** Tomita and Kusumoto disclose the optical disc as recited in claim 22, wherein the clamping area is circular band shaped and formed in an inner portion of the optical disc (although not specifically illustrated in the drawings, optical discs inherently comprise a center hole and a circular clamping area at the innermost periphery of the optical disc used for the fixture of the optical disc while recording and reproducing data).

**Regarding claim 26,** Tomita and Kusumoto disclose the optical disc as recited in claim 22, wherein a serial number (Kusumoto column 1, lines 34-38) and manufacturing date (see the discussion of bar codes containing "any arbitrary information in Kusumoto column 1 lines 49-51) corresponding to the optical disc are recorded in the BCA.

**Regarding claim 27,** Tomita and Kusumoto disclose the optical disc as recited in claim 22, wherein the BCA B is formed on the first recording layer (see Kusumoto column 8 lines 11-14 where the bar code is written into all the recording layers).

**Regarding claim 28,** Tomita and Kusumoto disclose the optical disc as recited in claim 22, wherein the BCA B is formed on the second recording layer (see Kusumoto column 8 lines 11-14 where the bar code is written into all the recording layers).

**9. Claims 23 and 24 rejected under 35 U.S.C. 103(a) as being unpatentable over Tomita et al. (US PGPub No. 2003/0202436 A1) and Kusumoto et al. (US Patent No. 6,295,262 B1), as applied to claim 22 above, and further in view of Nishiuchi et al. (US Patent No. 6,894,962 B1).**

Regarding claim 23, Tomita and Kusumoto teach the optical disc as recited in claim 22, but fail to teach that the first recording layer is formed of a phase change material and the tracking polarity information and/or the reflectivity information is recorded with a pattern of crystalline and/or non-crystalline marks. Nishiuchi however, teaches an optical disc wherein the first recording layer is formed of a phase change material (PCM) and the tracking polarity information and/or the reflectivity information is recorded with a pattern of crystalline and/or non-crystalline marks (see the information layers and BCA area in column 11 lines 44-53).

Regarding claim 24, Tomita and Kusumoto teach the optical disc as recited in claim 22, but fail to teach that the second recording layer is formed of a phase change material and the tracking polarity information and/or the reflectivity information are recorded with a pattern of crystalline and/or non-crystalline marks. Nishiuchi however, teaches an optical disc wherein the second recording layer is formed of a phase change material (PCM) and the tracking polarity information and/or the reflectivity information is recorded with a pattern of crystalline and/or non-crystalline marks (see the information layers and BCA area in column 11 lines 44-53).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the optical disc Tomita and Kusumoto to include

Art Unit: 2627

a BCA area recorded with crystalline marks as disclosed by Nishiuchi. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to allow information to be recorded "without damaging the information layer" (Nishiuchi column 11 lines 54 and 55).

***Allowable Subject Matter***

**10.** Claims 6-8, 10, 16, and 29 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Regarding claim 6, 7, 8, and 10,** none of the references of record, alone or in combination suggest or fairly teach the optical disc including all of the limitations of claim 4 **wherein a first two bits of the leading bytes of the tracking polarity information comprise identifiers of the respective tracking polarity information that is repeatedly recorded several times, and six other bits comprise remaining information of the tracking polarity information.**

**Regarding claims 16 and 29,** none of the references of record, alone or in combination, suggest or fairly teach the information recording and reproducing apparatus including all of the limitations of claims 15 and 22 respectively **wherein first two bits b1b0 of the tracking polarity information are identifiers of the tracking polarity information, where if the first two bits b1b0 are 00, the information indicates that first tracking polarity information is recorded in the BCA, if the first two bits b1b0 are 01, the information indicates that second tracking polarity**

**information is recorded in the BCA, if the first two bits b1b0 are 10, the information indicates that third tracking polarity information is recorded in the BCA, or if the first two bits b1b0 are 11, the information indicates that fourth tracking polarity information is recorded in the BCA.**

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaTanya Bibbins whose telephone number is (571) 270-1125. The examiner can normally be reached on Monday through Friday 7:30 am - 5:00 pm.

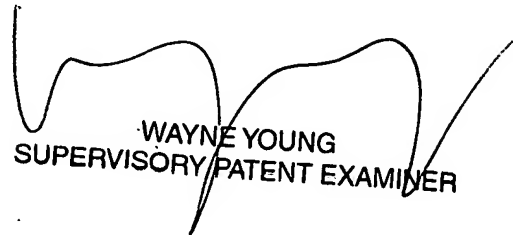
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

Art Unit: 2627

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
LaTanya Bibbins

  
WAYNE YOUNG  
SUPERVISORY PATENT EXAMINER